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New Species from Mexico and Central America

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Studies of Neotropical Caddis Flies, IV

New Species from Mexico and Central America

By Oliver S. Flint, Jr.

Curator, Division of Neuropteroids

During the past few years the insects of Mexico and Central America have been collected extensively by several members of the Smithsonian Institution's Department of Entomology. In 1963 W. D. Duckworth and D. R. Davis collected in northeastern Mexico (A.P.S. grant J–493). P. J. Spangler collected widely in Mexico in 1964, and, in 1965, on another trip, he collected as far south as Costa Rica (N.S.F. grant GB–1697). El Salvador, Costa Rica, and Panama were sites of collections in 1965 by W. D. Duckworth (N.S.F. grant GB–1800). I collected widely in Mexico and Guatemala in 1965 and 1966 (N.S.F. grant GB–2616). In addition to this material, other specimens are included whenever available. The holotypes of all new species are deposited in the U.S. National Museum.

Thirty-one species are described as new in this paper. There are many more probable new species in the collections, but because of their close relationship to known species they are not described herein. It is hoped that in time additional material will show whether or not these specimens represent mere variation or in fact are valid species.

RHYACOPHILIDAE

Atopsyche hidalgoi, new species

FIGURES 1, 2

This species is closely related to *A. tripunctata* Banks, from which it differs in possessing a shorter, broader paracercus, and in lacking the forked dorsal process of the aedeagus.

Adult. Length of forewing 10–11 mm. General color brown; wings with long, erect, brown, golden, and black hairs. Male genitalia: Fifth segment with an anterolateral process about one-fourth length of segment. Sixth sternum with an apicomesal process two-thirds length of segment, process of seventh sternum one-third length of segment. Paracercus broad, slightly longer than filicercus, bearing two teeth dorsally, ventrally with a hirsute ridge, which ends in a blunt tooth anteapically. Filicercus elongate, clavate. Clasper with basal segment having an inner ridge; apical segment with dorsal margin inrolled near apex. Aedeagus elongate with a slender inner rod, with a strong lateral spine at midlength, apex bearing dorsally a laterally directed tooth.

Holotype, male: Mexico (Mexico), Las Cruces National Park, La Marquesa, 3000 m elevation, July 5–9, 1965, Flint and Ortiz.

Paratypes: Same data, 4 ♂. Mexico (Morelos), Lagunas Zempoala National Park, July 10–11, 1965, Flint and Ortiz, 1 ♂.

GLOSSOSOMATIDAE

Culoptila montanensis, new species

FIGURES 3, 4

The species is close to *C. amberia* Mosely; however, the genitalia possess a complex of sclerites ventrally that Mosely does not show in *C. amberia*, and the internal spine of the aedeagus is less than half as long as that of *C. amberia*.

Adult. Length of forewing 3.5 mm. Color uniformly dark reddish brown; wings with anastamosis bearing a few paler hairs, most noticeably at posterior margin. Male genitalia: Sixth sternum with a short broad, subapical process. Tenth tergum with ventral arm well developed, apex produced and pointed, in ventral aspect horseshoe shaped. Ventrally with a pair of processes bearing a few apical hairs, a broad plate above processes curving upward and outward and bearing internally a curving rodlike process whose tip is directed posteroventrally. Aedeagus capsule-like, apex developed dorsally into a hoodlike structure, internally bearing a single heavily sclerotized spine about one-third length of aedeagus.

Holotype, male: Guatemala (El Progreso), Finca La Cajeta, Aug. 12–20, 1965, Flint and Ortiz.

***Protoptila laterospina*, new species**

FIGURE 5

Since this species bears a lateral spine from the aedeagus, it is placed in group 1. It is probably closest to *P. alexanderi* Ross, from which it differs in the longer, more deeply divided eighth sternum, very long, slender spine from the aedeagus, and the lateral spine from the tenth tergite.

Adult. Length of forewing 4 mm. Uniformly brown, faintly paler along anastamosis. Male genitalia: Sixth sternum with a pointed apicomesal process. Eighth tergum with posterior margin bearing a dense brush of setae; sternum produced into two long terete processes. Ninth segment rounded anteriorly, sternum barely produced posteriorly. Tenth tergite heavily sclerotized, dorsal margin with a shallow rectangular emargination, dorsoapical angle slightly produced, bearing a strong lateral spine. Aedeagus with a pair of basoventral processes, mesoventrally with two pairs of interlocking processes; paired long slender spines arising laterally, which extend posteriad beneath ventral margin of tenth tergite; apex bearing a heavily sclerotized ventral scooplike process and a dorsomesal spine.

Holotype, male: Costa Rica, La Lola, Apr. 28, 1957, R. D. Shenefelt.

***Protoptila marqua*, new species**

FIGURE 6

This species is a typical member of Mosely's group 1. It is perhaps most closely related to *P. piacha* Mosely, from which it differs in the very long bifid process of the eighth sternum, dorsal knobs and apical spine of the aedeagus, and the sharply twisted apex of the lateral spine.

Adult. Length of forewing 4 mm. Color fuscous, legs with annulae of pale hairs at apices of segments; wings with a band of whitish hairs at anastamosis, a small spot of white nearer base, and a diffuse band of brownish hairs subapically. Male genitalia: Sixth sternum with an elongate apicomesal process. Eighth segment barely produced dorsally; sternum developed into a pair of very long terete processes, the mesal division extending almost to base. Ninth segment developed into a long ventromesal process, rounded anteriorly. Tenth tergite decurved, uniformly widened apically, in lateral view with an apical tooth that extends as a shelf along the inner ventral margin. Aedeagus with a lateral spine whose tip is sharply

bent upward, dorsomesally with a pair of knobs, apically with a single spine.

Holotype, male: Mexico (Mexico), Las Cruces National Park, La Marquesa, 3000 m elevation, July 5–9, 1965, Flint and Ortiz.

Paratypes: Same data, 37 ♂ and 3 ♀.

***Protoptila cristata*, new species**

FIGURE 7

The species belongs to Mosely's group 2, and is perhaps closest to *P. liqua* Mosely. It is distinguished by the lack of processes from the eighth segment, the double teeth ventrally on the tenth tergite, and other differences in all parts of the genitalia.

Adult. Length of forewing 3 mm. Color in alcohol brown. Male genitalia: Sixth sternum with a short apicomesal process. Eighth sternum prolonged, tip bifid, bearing a tooth dorsally just basad of cleft. Tenth tergite short, dorsally developed into a crestlike process, ventrally produced into two teeth. Aedeagus with the typical complex of basoventral processes, apex bearing a C-shaped spine surmounting several smaller spines.

Holotype, male: Mexico (Vera Cruz), Cuitlahuac, Aug. 10–12, 1964, Spangler.

Paratypes: Same data, 3 ♂.

***Protoptila huasteca*, new species**

FIGURE 8

This species falls within Mosely's group 2 because there is no lateral spine from the aedeagus. It differs from all other species in this group by the shape of the eighth sternum and the aedeagus, especially in its possession of two pairs of slender ventral rods.

Adult. Length of forewing 3 mm. Color pale brown; forewing with intermingled brown and golden hairs. Male genitalia: Eighth tergum hoodlike with posterior margin heavily sclerotized; sternum strongly sclerotized with a pointed process from lateral margin at midlength, a ventrolateral tooth, and a deep V-shaped mesal excision. Ninth sternum produced into a scooplike structure, united apically with eighth sternum. Tenth tergite decurved laterally, apex developed into a sharp, mesally directed point. Aedeagus with a long paired process lying within ninth sternum, tips directed mesally; apex membranous with an internal spine; two pairs of slender processes ventrally, basal process short, distal process very long with curving apex.

Holotype, male: Mexico (San Luis Potosi), 25 miles north of Tamazunchale, Aug. 3–4, 1963, Duckworth and Davis.

Paratypes: Same data, 4 ♂; same data except June 26, 1965, Flint, 2 ♂; same data except Palitla, June 5, 1966, Flint, 2♂.

***Protoptila spangleri*, new species**

FIGURE 9

This species is a relative of *P. liqua* Mosely, from which it differs in possessing very long processes from the tenth tergites and a shorter midventral process from the eighth sternum.

Adult. Length of forewing 3 mm. Color in alcohol uniformly brown. Antennae of male with a series of segments at midlength much broadened. Male genitalia: Sixth sternum with a short apicomesal point. Eighth sternum produced in a short mesal process that has a broad mesal division. Ninth segment with lateral margins developed into long slender processes. Tenth tergite very narrow, produced into a ventral point and dorsally into a long, ventrally directed, whiplike process. Aedeagus with a ventral scooplike process; at midlength a long pointed process that bears paired teeth laterally; apical membrane with central and lateral hooks.

Holotype, male: Mexico (Vera Cruz), Cuitlahuac, Aug. 10–12, 1964, Spangler.

Paratypes: Same data, 6 ♂.

PHILOPOTAMIDAE

***Chimarra duckworthi*, new species**

FIGURES 10–12

This species is very different from all other described New World species. The structure of the lateral and median lobes of the tenth tergum is unique, as is the elongate, almost semicircular shape of the clasper.

Adult. Length of forewing 4.5 mm. Wings, body, and most of appendages fuscous, femora paler. Male genitalia: Ninth segment with anterior margin rounded, posteroventral projection short, terete. Tenth tergum with an elongate, semimembranous mesal lobe shaped somewhat like a duck's head in profile; lateral lobe bearing a heavily chitinized angled support, sensillae on a slightly enlarged area at the angle of the support, a lightly sclerotized plate with a darker central line beyond the support. Clasper narrow, elongate, tip decurved, pointed; in posteroventral aspect almost semicircular. Aedeagus prolonged into a pointed process ventroapically, internally with two long spines, a ring and rod, and a scabrous pouch attached to a darkened spherical base.

Holotype, male: Costa Rica, Turrialba, Mar. 1–6, 1965, Duckworth.

Paratypes: Costa Rica, La Lola near Matina, Mar. 11, 1965, Duckworth, 2 ♂. Panama, Canal Zone, Feb. 10, 1939, C. J. Drake, 1 ♂.

Chimarra ortiziana, new species

FIGURES 13–16

The relationship of this species to *C. duckworthi*, new species, is shown most clearly by the structure of the aedeagus and the elongate mesal lobe of the tenth tergum. It is distinguished by the narrowed and flared tips of the lateral lobes of the tenth tergum and the broader base of the clasper.

Adult. Length of forewing 4–5 mm. Color fuscous, bases of legs somewhat paler. Male genitalia: Ninth segment rounded anteriorly, mesoventral process about as long as broad. Tenth tergum with a pair of elongate semimembranous mesal processes; lateral lobe broad at base, sharply constricted subapically, tip developed into a dorsolateral point. Clasper developed apically into a mesodorsally directed lobe, broad and scooplike ventrally. Aedeagus slightly angulate, with an apicoventral spine; internally with a scabrous sac with a darkened globose base, two spines of equal length, and a ring and rod.

Holotype, male: Mexico (Vera Cruz), near Huatusco, July 25–26, 1965, Flint and Ortiz.

Paratypes: Same data, 2 ♂. Mexico (Vera Cruz), route 140, km 387, near El Encero, July 22, 1965, Flint and Ortiz, 1 ♂. Mexico (Vera Cruz), Cordoba, June 7, 1966, Flint and Ortiz, 3 ♂. Guatemala (Izabal), Las Escobas near Matias de Galvez, Aug. 14–16, 1965, Flint and Ortiz, 7 ♂. Guatemala (Suchitepequez), Finca Mocá, June 12, 1966, Flint and Ortiz, 1 ♂.

Chimarra antigua, new species

FIGURES 17, 18

Closely related to *C. setosa* Ross, this species differs from it in possessing a dorsoapical process on the tenth tergite and a broader dorsomesal shelf on the clasper.

Adult. Length of forewing 4–5 mm. Color totally fuscous. Male genitalia: Ninth segment with a narrow posteroventral keel. Tenth tergite broad, with dorsoapical angle developed into a strong hook that bears the sensillae. Clasper rounded in lateral view, dorsal margin developed into a broad, shelflike mesal process, and a slight ridge subapically also on mesal face. Aedeagus simple, with two spines, one of which is about two-thirds length of other.

Holotype, male: Mexico (San Luis Potosi), El Salto, about 25 miles west of Antiguo Morelos, July 11–14, 1963, Duckworth and Davis.
Paratype: Same data, 1 ♂.

Chimarra (Curgia) aureopunctata, new species

FIGURES 19–21

The species is related to *C. barrettae* (Banks) and *C. banksi* (Ulmer) as is shown by the very similar shape of the ninth and tenth segments and the claspers. From both it differs most noticeably in the shape of the eighth tergum, which is divided deeply dorsomesally.

Adult. Length of forewing 6–6.5 mm. Color brown, forewing with many spots of golden hair intermingled with the brown. Male genitalia: Eighth tergum produced ventrolaterally, deeply divided mesally; ventrolaterally produced into a flattened lobe that overlies a narrow, ventral setiferous process. Ninth segment with mesoventral lobe about as broad as long. Cercus about twice as long as broad. Tenth tergum developed into a mesal hood bearing many sensillae. Clasper developed into a dorsal point and a broader ventral lobe. Aedeagus tubular, internally with four short black spines and a pair of interlocking C-shaped sclerites.

Holotype, male: Costa Rica, Turrialba, Feb. 22–28, 1965, Duckworth.
Paratype: Same data, 1 ♂.

Chimarra (Curgia) lobata, new species

FIGURES 22–24

This species also belongs to the *C. barrettae* group and seems closest to *C. persimilis* Banks, from which it differs in the relatively unmodified eighth tergum, lack of an elongated ventral lobe from the tenth tergum, and the lack of a ventral lip on the aedeagus.

Adult. Length of forewing 6.5 mm. Color in alcohol uniformly pale brown. Male genitalia: Eighth tergum with posterior margin rounded in lateral view, from dorsum with rounded submesal lobes. Ventromesal process of ninth segment about as long as broad. Tenth tergum developed into a narrow hood dorsally and a broader basolateral lobe. Clasper elongate, tapering toward dorsoapical angle. Aedeagus with two short black spines, a slender dark rod, and two C-shaped sclerites.

Holotype, male: Panama, Canal Zone, Rio Agua Salud, Mar. 30, 1965, Duckworth.
Paratype: Same data, 1 ♂.

Chimarra (Curgia) wilsoni, new species

FIGURES 25, 26

This is another member of the *C. barrettae* group and is probably closest to *C. barrettae* itself, from which it differs in possessing a pointed tenth tergum and a mesal point on the clasper.

Adult. Length of forewing 7.5 mm. Color brown, legs and antennae slightly paler, head with hairs golden, wings with golden spots intermingled with brown. Male genitalia: Eighth tergum simple, posterior margin slightly projecting, but otherwise unmodified. Ventromesal process of ninth segment terete, longer than broad. Tenth tergum hoodlike, developed into an elongate dorsomesal point. Clasper almost quadrate in lateral aspect, apicoventral angle slightly developed, and bearing a strong dorsomesal spine. Aedeagus tubular, slightly curved, with a short spine (others broken off?) and a pair of intertwined C-shaped sclerites.

Holotype, male: Costa Rica, Las Cruces near San Vito, Mar. 19–20, 1965, Duckworth.

I take pleasure in dedicating this species to Robert Wilson, on whose property the species was collected and who was very helpful to Donald and Sandra Duckworth during their stay in southern Costa Rica.

PSYCHOMYIIDAE

Polyplectropus macrostylus, new species

FIGURES 27, 28

This species is distantly related to *P. thilus* (Denning), from which it differs in the larger outer lobe of the cercus and the smaller basolateral lobe of the clasper.

Adult. Length of forewing 6 mm. Brown, antennae annulate, forewing with many spots of golden hair. Male genitalia: Ninth segment almost circular in lateral aspect. Tenth segment membranous. Cercus divided into three parts: a thin outer plate slightly longer than broad; a short, broad inner lobe; and a long slender style first directed anteriorly, then curving posteriad. Clasper with an upright basolateral lobe about as high as long, and a long, flat ventral lobe with a short apicodorsal point. Aedeagus short, with ventral lip greatly prolonged, and a stout internal Y-shaped sclerite.

Holotype, male: Costa Rica, Golfito, Apr. 25–28, 1965, Duckworth.

Polycentropus costaricensis, new species

FIGURES 29–32

This species is perhaps closest to *P. picana* Ross, from which it differs greatly in the shape of the claspers and cerci.

Adult. Length of forewing: male 8–9 mm, female 10–12 mm. Color brown, head hairs fuscous, wings brown with many small spots of golden hair. Male genitalia: Anterior margin of ninth segment nearly vertical, posterior margin rounded. Cercus divided into an outer lobe with a slightly differentiated dorsobasal portion and an elongate ventral portion; inner lobe with an enlarged base narrowing to a sturdy, laterally curving process. Clasper somewhat triangular in lateral aspect, with a mesal spine. Aedeagus with apex developed into a trilobed ventral lip, internally with two pairs of short spines, a basal complex of small sclerites, and a pair of apical plates.

Holotype, male: Costa Rica, Mount Poas, May, William Schaus.

Paratypes: Costa Rica, Irazu, 2200–2500 m, May 21–28, 1930, Reimoser, 2 ♂, 6 ♀ (Vienna Museum).

***Polycentropus guatemalensis*, new species**

FIGURE 33

The species is closely related to *P. halidus* Milne, from which it differs most noticeably in the sinuate ventral process of the cercus, which is longer and hooked in *P. halidus*, and the longer and narrower claspers, whose dorsoapical point is displaced slightly basad.

Adult. Length of forewing: male 6–7 mm, female 8 mm. Color dark brown; body and appendages yellow brown, forewings dark brown with numerous spots of golden hair. Male genitalia: Ninth segment with anterior and posterior margins parallel. Cercus with a broad dorsolateral lobe, an elongate, slightly sinuous ventromesal process, and dorsally with an elongate rodlike process. Clasper long and slender, with dorsal margin forming an anteapical point, a sinuate ridge on inner surface culminating in a basomesal spine. Aedeagus with a large apicoventral process, apicodorsally with flat plates, internally with a pair of spines.

Holotype, male: Guatemala (Suchitepequez), Finca Mocá, June 12, 1966, Flint and Ortiz.

Paratypes: Same data, 1 ♂, 1 ♀. Guatemala, Chimaltenango, Aug. 19–20, 1965, Spangler, 1 ♂.

***Polycentropus aztecus*, new species**

FIGURE 34

This species is closest to *P. bartolus* Denning, from which it differs in possessing an arched dorsal process and an apical tooth on the cerci and in having an evenly rounded outline to the clasper.

Adult. Length of forewing 8 mm. Color dark brown; body and appendages slightly paler, forewings with numerous small spots of golden hair. Male genitalia: Ninth segment with anterior margin

rounded. Cercus with dorsolateral lobe continuing evenly into a decurved apical hook and a small ventral lobe; with a short, slighly arched, dorsal process. Clasper short and rounded, with a mesal ridge bearing a sharp tooth near apex. Aedeagus with a sharply decurved apicoventral lip, dorsolateral plates, and many small internal spines.

Holotype, male: Mexico (Michoacan), Insurgente Morelos National Park, east of Morelia, July 14, 1966, Flint and Ortiz.

Paratype: Mexico (Morelos), Cuernavaca, June, collection N. Banks, 1 ♂ (Museum of Comparative Zoology). Mexico (Durango), 10 miles west of El Salto, 9000′, June 25, 1964, J. E. H. Martin, 1 ♂; same except July 15, 1 ♂; same except July 28, 1 ♂; same except July 29, 2 ♂; same except August 6, 1 ♂ (Canadian National Collection).

***Xiphocentron aureum*, new species**

FIGURES 35, 36

Closely related to *X. bilimeki* Brauer, this species differs in the elongated bifid apex of the ninth sternum, enlarged apex of the aedeagus, and other small details of the genitalia.

Adult. Length of forewing 8.5 mm. Facial hairs, body, and legs golden; antennae, foretibiae and tarsi, body hairs, and wings fuscous. Hind tibiae slightly enlarged, with a single very large apical spur extending slightly more than half length of basitarsus. Male genitalia: Dorsal bridge of ninth segment narrow, ninth sternum projecting mesally, tip of projection bifid. Tenth tergum broad in lateral aspect, narrow from dorsum. Cercus elongate, in lateral aspect about eight times as long as wide. Clasper bearing a large setal patch mesally, apex narrow and curving dorsomesally. Aedeagus very slender, over twice as long as combined length of ninth segment and cercus, tip enlarged.

Holotype, male: Mexico (Vera Cruz), near Huatusco, July 25–26, 1965, Flint and Ortiz.

HYDROPTILIDAE

***Leucotrichia viridis*, new species**

FIGURES 37–39

This species is related to *L. sarita* Ross although the aedeagus more closely resembles that of *L. pictipes* (Banks). From both it is distinguished easily by the patch of bright green setae on the forewing. The clasper is narrower than in any other described species and the structure of the aedeagus is unique in detail.

Adult. Length of forewing 3 mm. Color grey, antennae with a subapical group of pale segments, face and tegulae with green hairs,

forewings green except for apex. Male genitalia: Seventh sternum with a long spatulate process. Eighth sternum produced laterally, broadly U-shaped ventrally. Ninth segment with a rectangular dorsomesal emargination, posterior margin bordered with a row of long setae. Clasper long and slender, with a dorsal tooth at midlength. Aedeagus membranous at apex, with a pair of dark lateral plates and a ventral scoop; a complex of processes at midlength that bears a pair of basally projecting rods; a simple tubular basal portion.

Holotype, male: Guatemala (Izabal), Las Escobas near Matias de Galvez, Aug. 14–16, 1965, Flint and Ortiz.

Paratypes: Same data, 47 ♂, 4 ♀.

Zumatrichia echinata, new species

FIGURES 40–42

This species is closely related to *Z. galtena* Mosely, from which it differs in lacking digitate lobes apically on the long lateral processes of the claspers and in having a mesoventral spine on the aedeagus.

Adult. Length of forewing 3–3.5 mm. Body and legs brown; antennae darker, with a series of paler segments subapically; head, thorax, and forewings with intermingled patches of greyish-green and black hairs. Male genitalia: Seventh sternum with a pointed mesal process. Eighth sternum with ventral margin almost squarely truncate, with a narrow mesal excision. Ninth segment bearing a row of stout setae dorsally, a process laterally (probably bearing a long seta apically); dorsomesally with a large membranous region with a dorsally projecting lobe, lateral margins heavily sclerotized and bearing posteriorly a forked process that articulates with the lateral sheath of the aedeagus. Clasper digitate in lateral aspect, bearing dorsally a long, heavily sclerotized, sinuous process. Aedeagus with a pair of ovoid lateral sheaths that bear a midventral tooth. Aedeagus proper with a pair of apical spines, a dorsomesal tongue-like strap, lateral sheaths, paired dorsomesal knobs bearing processes, and a complete basal loop.

Holotype, male: Guatemala (El Progreso), San Agustin Acasaguastlán, Aug. 11–21, 1965, Flint and Ortiz.

Paratype: Same data, 1 ♀.

Costatrichia panamensis, new species

FIGURES 43–45

This species is closely related to the genotype with which it agrees in the generic characters: reflexed costal cell, enlarged antennal segments, spine of the seventh sternum, and general plan of the

genitalia. It differs strikingly from the type-species, *C. lodora* Mosely, in having a dorsal process from the clasper.

Adult. Length of forewing 2.5 mm. Color in alcohol blackish brown. Male genitalia: Eighth sternum produced beneath ninth segment. Ninth segment with a rectangular dorsomesal emargination, and a short lateral process bearing several long setae. Clasper divided into an elongate, quadrate ventral lobe, and a long tapering dorsal process whose tip meets mesally the tip of the other process. A pair of ovoid plates covering the aedeagus laterally. Aedeagus apically sclerotized and slightly decurved, beneath this a single spine, a pair of plates lateroventrally slightly beyond midlength, a mid-dorsal dome, basal loop large and complete.

Holotype, male: Panama, Canal Zone, Río Agua Salud, Mar. 30, 1965, Duckworth.

Ochrotrichia cruces, new species

FIGURES 46, 47

This species shows some relationship to *O. mono* Ross, from which it is distinguished by the proportionately broader clasper and different structure of the tenth tergum.

Adult. Length of forewing 3.5 mm. Color fuscous, wings mostly denuded, but apparently with some patches of white hair. Male genitalia: Ninth segment rather quadrate laterally, deeply emarginate dorsally. Clasper broadly triangular in lateral aspect, with a ventral row and apical patch of black pegs on mesal face. Tenth tergum complex, with an elongate spine arising dorsomesally curving to right side, a short, black-tipped spine arising slightly beyond, apically with another longer spine, whose tip is directed ventrally, on right side a broad thin plate bearing a short spine mesally.

Holotype, male: Mexico (Mexico), Las Cruces National Park, La Marquesa, 3000 m elevation, July 5–9, 1965, Flint and Ortiz.

Metrichia mexicana, new species

FIGURES 48–51

I am tentatively placing this species in the genus *Metrichia*, to which it will key, although the genital pattern seems quite different. From *M. nigritta* (Banks) it differs in the large lobate tenth tergum and the lack of heavy spines from the aedeagus.

Adult. Length of forewing 2.5 mm. Head and appendages cream colored, tarsi annulate, forewings with large cream-colored patches of hair mixed with fuscous spots. Male genitalia: No processes from sterna. Ninth segment rounded anteriorly. Tenth tergites emerging imperceptibly from ninth segment, cleft mid-dorsally, apices rounded

and bearing a few dark spines. Clasper elongate, with apicoventral angle developed into a process whose tip is upturned. Dorsally an internal U-shaped plate that bears a long narrow process ventrally passing around aedeagus; midventrally with a sinuate indistinct sclerotization. Aedeagus long, apex upturned slightly, with a long tightly appressed process wrapped around stem and another pointed process near end.

Holotype, male: Mexico (Vera Cruz), Río Tacolapan, route 180, km 551, July 25–26, 1966, Flint and Ortiz.

Paratypes: Same data, 2 ♀. Mexico (Vera Cruz), Cuitlahuac, Aug. 10–12, 1964, Spangler, 1 ♂. Guatemala (Suchitepequez), Finca Mocá, June 12, 1966, Flint and Ortiz, 3 ♂, 1 ♀.

Neotrichia costaricensis, new species

FIGURES 52–54

Perhaps most closely related to *N. edalis* Ross, this species seems rather isolated within the genus. The dorsoapical processes of the aedeagus and the hoodlike shape of the tenth tergum are unique.

Adult. Length of forewing 2 mm. Specimens in alcohol uniformly brown. Male genitalia: Eighth segment incomplete ventrally, with anterolateral processes. Ninth segment with anterolateral processes. Tenth tergum hoodlike. Bracteole very indistinct, appearing elongate and enlarged apically in ventral view. Claspers small, black, trianguloid in ventral view. Subgenital plate black, small, and chevron shaped in ventral aspect. Aedeagus slightly moniliform, with a sclerotized apicoventral strap; apex with two pairs of dorsally directed processes, basal process longest with basal teeth, apical process shorter.

Holotype, male: Costa Rica, La Lola near Matina, Mar. 11, 1965, Duckworth.

Paratypes: Same data, 1 ♂; same except May 1, 1957, R. D. Shenefelt, 1 ♂.

Hydroptila veracrusensis, new species

FIGURES 55–57

This species seems to be related to *H. berneri* Ross, from which it is distinguished by the lateral processes of the ninth segment and the well-developed spiral process of the aedeagus.

Adult. Length of forewing 2 mm. Color in alcohol uniformly brown. Male genitalia: Seventh sternum with a pointed process mesally. Ninth segment with a pointed apicolateral process. Tenth tergite well sclerotized laterally, membranous mesally. Clasper elongate, rounded apically in lateral aspect with a single dark point, in

ventral aspect ribbon-like with tip slightly recurved. Aedeagus with a heavily sclerotized apical portion that is enlarged slightly at neck, spiral process wound around neck one-and-a-quarter turns with apex laying along apical portion, basal portion slender.

Holotype, male: Mexico (Vera Cruz), Cuitlahuac, Aug. 10–12, 1964, Spangler.

Paratype: Mexico (San Luis Potosi), Palitla, June 5, 1966, Flint, 1 ♂.

HYDROPSYCHIDAE

Diplectrona chiapensis, new species

FIGURE 60

This is the first species of the genus found in the New World south of the United States. The male may be recognized immediately by the internal sacs in the seventh segment and the shape of the lobes of the tenth tergites.

Adult. Length of the forewing: male 9–10 mm, female 12 mm. Color pale brown, male with faint dark irrorations on forewings, female with dark marks more distinct. Fifth segment with an anterolateral process that is slightly longer than segment. Male genitalia: Seventh segment with a pair of large striate internal sacs opening on posterior margin. Tenth tergum divided into trianguloid lateral lobes that much surpass the mesal lobe, dorsally completely divided on midline. Clasper long and terete. Aedeagus obliquely truncate apically, subapically with a complex of internal sclerites.

Holotype, male: Mexico (Chiapas), Dolores, route 190, km 1190, Aug. 7, 1965, Flint and Ortiz.

Paratypes: Same data, 5 ♂, 3 ♀.

Hydropsyche vespertina, new species

FIGURES 58, 59

This species is a member of the *H. depravata* group. The combination of dorsal point and rectangular shape of the tenth tergum, moderately angled base and enlarged tip of the aedeagus will separate this species from the other described species of the group.

Adult. Length of forewing 9–11 mm. Brown, antenna with dark V-marks on basal segments, wings marked with typical pattern of golden-brown and grey-brown hairs. Male genitalia: Lateral lobe of ninth segment well developed. Tenth tergum rectangular in lateral aspect, with a sharp apicodorsal point, and a shallow U-shaped dorsomesal excision. Clasper with upper surface of basal segment rather sinuate, apical segment terete. Aedeagus with base angled

at about 135° to axis of stem, tip enlarged, divided into lateral plates.

Holotype, male: Mexico (Michoacan), Tuxpan, July 7–8, 1965, Flint and Ortiz.

Paratypes: Same data, 3 ♂. Mexico (Durango), 11 miles west of El Salto, June 29–30, 1964, Spangler, 1 ♂. Mexico (Michoacan), Turundeo, route 15, km 200, July 14, 1966, Flint and Ortiz, 3 ♂, 1 ♀. Mexico (Michoacan), San Lorenzo, route 15, km 206, July 14–15, 1966, Flint and Ortiz, 4 ♂; same except July 19, 1966, 1 ♂, 1 ♀.

Plectropsyche sandrae, new species

FIGURES 61–63

This is the second species described in the genus *Plectropsyche*. From the type-species, *P. hoogstraali* Ross, it differs in coloration, shape of the tenth tergum, and forked apex of the clasper.

Adult. Length of forewing 7 mm. Color brown, legs paler, wings with many flecks of golden hair. Male genitalia: Ninth segment without a stout hooked process from posterior margin. Tenth tergum with two lateral lobes, basal one flat and flared laterad, and dorsal one terete and upright, apical portion slightly expanded apicoventrally. Clasper with basal segment angulate near midlength, apical segment with a short, dorsal, subapical process. Aedeagus with base inflated, apex with a pair of lateral lobes and a central knob.

Holotype, male: Costa Rica, Golfito, Apr. 25–28, 1965, Duckworth.

I take pleasure in dedicating this species to Sandra Duckworth, who collected this and many other Trichoptera on joint trips with her husband.

Leptonema chila, new species

FIGURES 64–67

This is closely related to *L. salvini* Mosely but differs in the pointed ventral extension of the tenth tergite and the mesodorsal process and lateral spiculate band of the aedeagus.

Adult. Length of forewing 15 mm. Color pale brown. Male genitalia: Tenth tergite with two long dorsal and one dorsomesal processes; laterally a flattened area, expanded ventrally and developed into a sharp tooth. Clasper long, slender, without basomesal processes, apical segment curving mesally and with a pad of black spicules. Aedeagus apically with a pair of basally directed processes along dorsum, tip developed into a pair of short, lateral, winglike lobes, an erect dorsomesal process, laterally with a band of spicules that appears to demark the margin of a flat structure fused to the central tube.

Holotype, male: Mexico (Guerrero), near Chilpancingo, route 95, km 297, July 15–16, 1965, Flint and Ortiz.

Paratypes: Same data, 1 ♂, 2 ♀.

LIMNEPHILIDAE

Limnephilus maya, new species

FIGURES 68–70

The species is perhaps closest to *L. hamifer* Flint, from which it is differentiated immediately by the sharp hook arising from the mesoventral angle of the cercus.

Adult. Lenth of forewing: male 12–13 mm, female 14–15 mm. Color brownish, wings faintly irrorate, with darker specks along veins. Basal segment of foretarsus in male about one-third length of second segment; forefemur and tibia with a band of dark spicules. Male genitalia: Eighth tergum without apicomesal spiculate lobe. Cercus with a broad dorsolateral lobe, and an erect, dark, hooklike mesoventral process. Tenth tergite low, darkened, developed into a short apicodorsal point. Clasper united to posterior margin of ninth segment, but with a short, quadrate, dorsal prolongation. Aedeagus with lateral arms strongly sclerotized, curved dorsad and ending in a sharp point; central tube with a pair of apicolateral heart-shaped plates and a central beak.

Holotype, male: Guatemala (El Progreso), Finca la Cajeta, Aug. 12, 1965, Flint and Ortiz.

Paratypes: Guatemala, 20 miles northwest of Chimaltenango, Aug. 20, 1965, Spangler, 1 ♂, 1 ♀. Guatemala (Totonicapan), San Cristobal T., June 13, 1966, Flint and Ortiz, 3 ♂. Guatemala, Purulha, July, Schaus and Barnes, 1 ♀. Mexico (Chiapas), San Cristobal las Casas, Aug. 6–8, 1965, Flint and Ortiz, 1 ♂; same except July 17–21, 1964, Spangler, 2 ♀. Mexico (Chiapas), Teopisca, July 9, 1966, Flint and Ortiz, 1 ♂.

LEPTOCERIDAE

Triaenodes anomala, new species

FIGURE 71

This species is not related obviously to any described North American species of *Triaenodes*. The short, sharply curved basal spine of the clasper, short, pointed tenth tergite, and paired dorsal spines of the aedeagus are all unique.

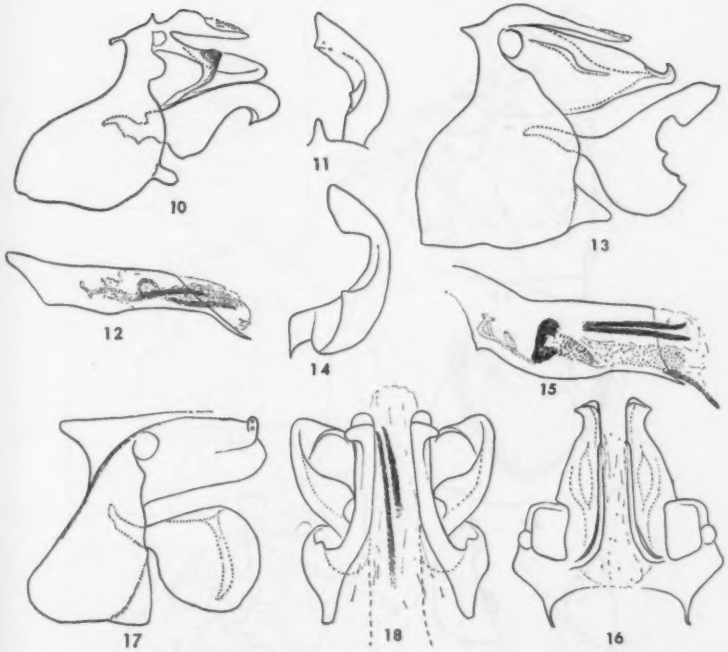
Adult. Length of forewing 6 mm. Specimens pale brown, but completely denuded. Male genitalia: Ninth segment slightly expanded ventrally, with ventroapical section supporting claspers

sharply demarked. Cercus short, terete. Tenth tergite pointed, arched over hoodlike dorsal covering of aedeagus. Clasper with a spinelike basal process whose apical half is curved sharply ventrad, a thin dorsal lobe arising from an irregular ridge, apex produced into a sharp point. Aedeagus with a thin, elongate, and pointed ventral part, dorsally two sharply pointed spines, apical halves of all curved sharply ventrad.

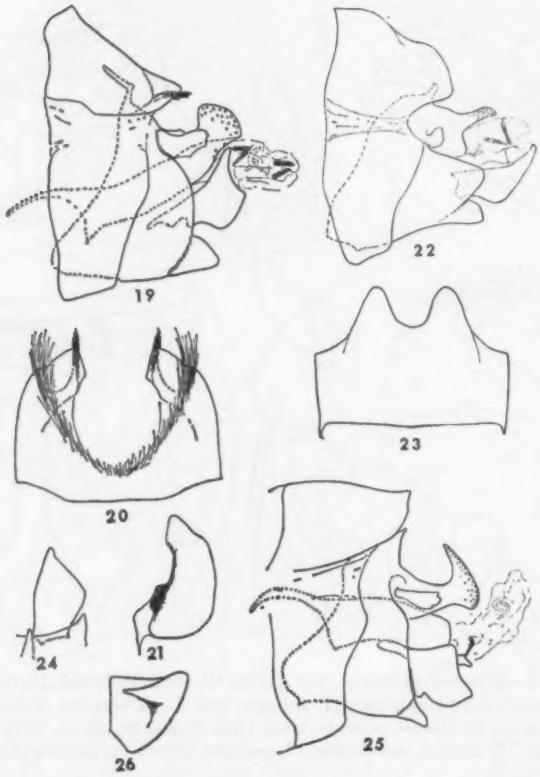
Holotype, male: Mexico (Guerrero), near Chilpancingo, route 95, km 297, July 15–16, 1965, Flint and Ortiz.

Paratypes: Same data, 2 ♀.

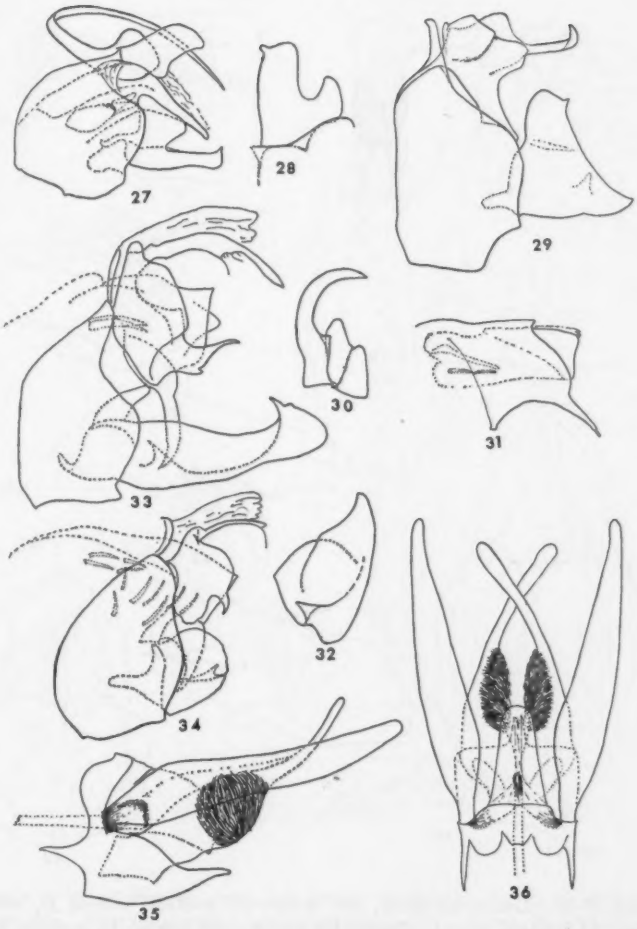
FIGURES 1–9.—*Atopsyche hidalgoi*, new species: 1, genitalia, lateral; 2, aedeagus, lateral. *Culoptila montanensis*, new species: 3, genitalia, posteroventral; 4, genitalia, lateral. *Protoptila laterospina*, new species: 5, genitalia, lateral. *P. marqua*, new species: 6, genitalia, lateral. *P. cristata*, new species: 7, genitalia, lateral. *P. huasteca*, new species: 8, genitalia, lateral. *P. spangleri*, new species: 9, genitalia, lateral.



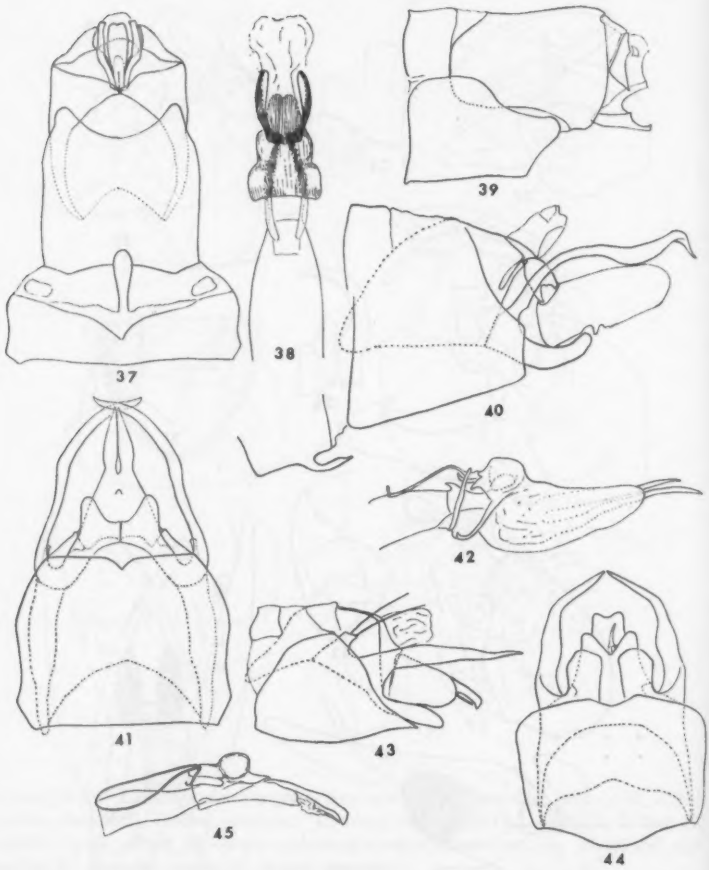
FIGURES 10–18.—*Chimarra duckworthi*, new species: 10, genitalia, lateral; 11, right clasper and ninth sternum, posteroventral; 12, aedeagus, lateral. *C. ortiziana*, new species: 13, genitalia, lateral; 14, clasper, posteroventral; 15, aedeagus, lateral; 16, ninth and tenth terga, dorsal. *C. antigua*, new species: 17, genitalia, lateral; 18, genitalia, dorsal.



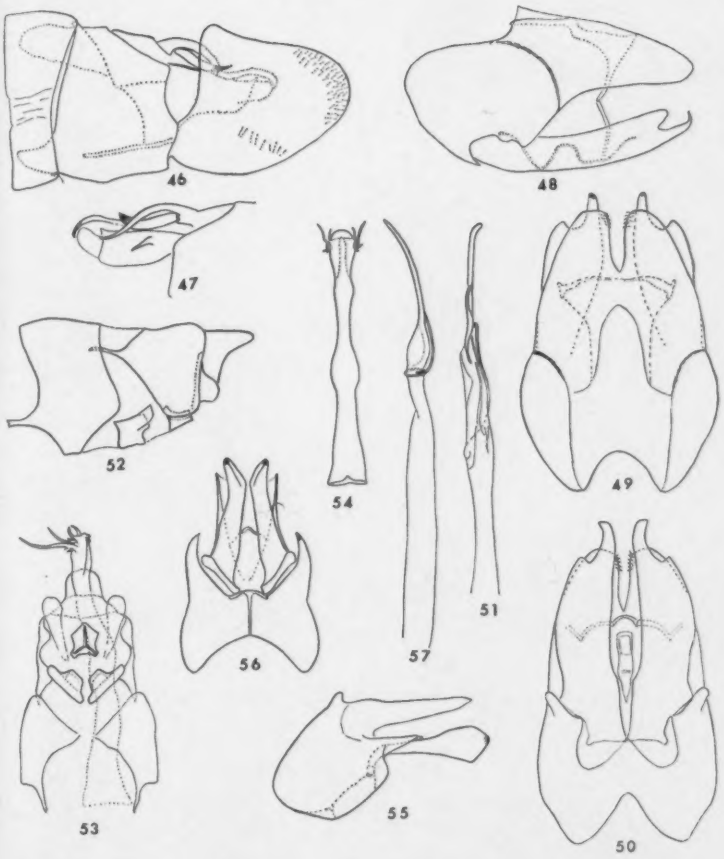
FIGURES 19–26.—*Chimarra aureopunctata*, new species: 19, genitalia, lateral; 20, eighth tergum, dorsal; 21, clasper, posterior. *C. lobata*, new species: 22, genitalia, lateral; 23, eighth tergum, dorsal; 24, clasper and ninth sternum, posteroventral. *C. wilsoni*, new species: 25, genitalia, lateral; 26, clasper, posterior.



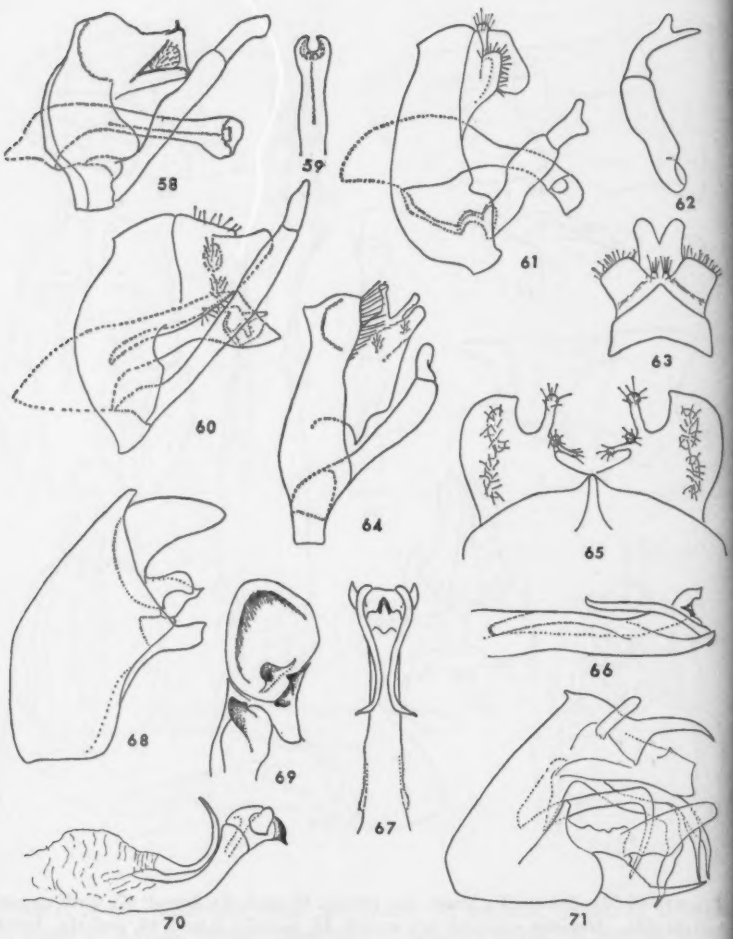
FIGURES 27–36.—*Polyplectropus macrostyla*, new species: 27, genitalia, lateral; 28, clasper and ninth sternum, ventral. *Polycentropus costaricensis*, new species: 29, genitalia, lateral; 30, left cercus, dorsal; 31, aedeagus, lateral; 32, right clasper, posterior. *P. guatemalensis*, new species: 33, genitalia, lateral. *P. aztecus*, new species: 34, genitalia, lateral. *Xiphocentron aureum*, new species: 35, genitalia, lateral; 36, genitalia, dorsal.



FIGURES 37–45.—*Leucotrichia viridis*, new species: 37, genitalia, ventral; 38, aedeagus, dorsal; 39, genitalia, lateral. *Zumatrichia echinata*, new species: 40, genitalia, lateral; 41, genitalia, ventral; 42, aedeagus, lateral. *Costatrichia panamensis*, new species: 43, genitalia, lateral; 44, genitalia, ventral; 45, aedeagus, lateral.



FIGURES 46–57.—*Ochrotrichia cruces*, new species: 46, genitalia, lateral; 47, tenth tergum, right side. *Metrichia mexicana*, new species: 48, genitalia, lateral; 49, genitalia, dorsal; 50, genitalia, ventral; 51, aedeagus, lateral. *Neotrichia costaricensis*, new species: 52, genitalia, lateral; 53, genitalia, ventral; 54, aedeagus, dorsal. *Hydroptila veracruzensis*, new species: 55, genitalia, lateral; 56, genitalia, ventral; 57, aedeagus, lateral.



FIGURES 58–71.—*Hydropsyche vespertina*, new species: 58, genitalia, lateral; 59, tip of aedeagus, ventral. *Diplectrona chiapensis*, new species: 60, genitalia, lateral. *Plectropsyche sandrae*, new species: 61, genitalia, lateral; 62, clasper, posteroventral; 63, ninth and tenth terga, dorsal. *Leptonema chila*, new species: 64, genitalia, lateral; 65, ninth and tenth terga, dorsal; 66, tip of aedeagus, lateral; 67, tip of aedeagus, dorsal. *Limnephilus maya*, new species: 68, genitalia, lateral; 69, cercus, tenth tergum, and clasper, posterior; 70, aedeagus, lateral. *Triaenodes anomala*, new species: 71, genitalia, lateral.

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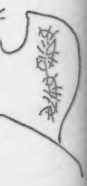

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